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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/020,287	12/11/2001	Andrew Cheng	2477	8054

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EXAMINER

PATEL, ISHWARBHAI B

ART UNIT

PAPER NUMBER

2827

DATE MAILED: 04/07/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/020,287

Applicant(s)

CHENG, ANDREW

Examiner

Ishwar (I. B.) Patel

Art Unit

2827

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 December 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) 3,4 and 9 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 508 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's disclosed prior art, figure 3 and 4, hereafter art34, and further in view of Hayashi et al., US Patent 5,369,301, hereafter Hayashi and Suehiro Mitsuo et al., Japanese Patent No. JP405299832A, hereafter, Suehiro.

Regarding claims 7 and 8, art34 discloses a circuit board with conductive traces formed there on; an electrical connector comprising an insulation portion and conductive members retained in the insulation portion, each conductive member comprising a tail section corresponding to one of the conductive traces of the circuit board; soldering pre-forms arranged between the conductive traces and the tail sections of the conductive members; but

fails to disclose a heat distributor attached to the connector and comprising conductive pins thermally engaging the conductive members of the connector so as to uniformly transfer heat to / from the soldering pre-forms.

However, heat distributors are known in the art for dissipating the heat from the system to safeguard the system from damage or for supplying heat to the system.

Hayashi discloses one such heat distributor with base plate made of thermally conductive material, the base plate having a bottom face and an opposite top face; and a plurality of thermally conductive pins extending from the bottom face of the base plate (Hayashi figure 1a).

Suehiro discloses the pins arranged in accordance with the cells and are insertable into the cells to physically engage the contact for transferring heat to the contacts and to melt the soldering material, see Suehiro figure 1.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the heat distributor of Hayashi or Suehiro for the apparent reason of transferring the heat to the solder material.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 2, 5 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Hayashi et al., US Patent 5,369,301, hereafter Hayashi.

Regarding claim 1, Hayashi discloses a heat distributor comprising:

a base plate made of thermally conductive material, the base plate having a bottom face and an opposite top face; and a plurality of thermally conductive pins extending from the bottom face of the base plate (pin fin heat sink with pins 10 with top and bottom surface, see figure 1, column 3, line 5-15).

Regarding the preamble, "adapted to be mounted to an electrical connector" as well as "the pins insertable into the housing", do not recite any positive structure. The elements can be modified to adapt to the required situations. Further, it has been held that the recitation that an element is "adapted to" perform a function is not a positive limitation but only requires the ability to so perform. In re Hutchison, 69 USPQ 138.

Regarding claim 2, Hayashi discloses the heat distributor made of aluminum, which is a metal (Hayashi - column 5, line 40-50).

Regarding claim 5 and 6, the applicant is claiming various sizes of the base plate of the distributor. However, the size of the base plate will be selected based on the device with which the distributor to be used and can be designed suitably.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to select the size of the base of the heat distributor suitably for the device with which it is to be used in order to satisfactory dissipate the heat.

Response to Arguments

4. Applicant's arguments filed December 27, 2002 have been fully considered but they are not persuasive.

Regarding claim 1, the applicant argument about the bottom surface of the heat distributor directly mounted and positioned on the housing of the connector and pins are arranged into the cells of the housing are not correct. Claim 1, claims "**a heat distributor is adapted to be mounted**" but not actually mounted and further "**the pin are insertable**" but not inserted actually.

Regarding claims 7 and 8, the argument is moot in view of the new grounds of rejection.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Szu et al., discloses an electrical connector including insulative housing and connecting terminals, see figure 3.

Lin et al., discloses a surface mountable electrical connector for connecting an electronic component to a circuit board including an insulating housing.

JP09331003A discloses a pin fin type heat sink made of aluminum or aluminum alloy.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ishwar (I. B.) Patel whose telephone number is (703) 305 2617. The examiner can normally be reached on M-F (8:30 - 5).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David L Talbott can be reached on (703) 305 9883. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305 3431 for regular communications and (703) 305 7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308 0956.

ibp
April 4, 2003


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